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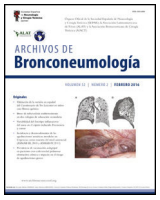

Editorial

One year on: Are we ready for COVID?☆

Y un año después, ¿estamos preparados para la COVID?

On February 15, 2020, we warned of the imminent pandemic expansion of the 2019-nCoV virus.[1] Just one year later, we have a better understanding of the antigenic characteristics, replicative cycle and genome of SARS-CoV-2, and candidate therapeutic targets have been identified. The high transmissibility of this virus via aerosols has also been confirmed, a factor that we know increases the risk of contagion in indoor environments, even if safe distances are maintained. This means that more stringent preventive measures are needed, especially among health professionals, given the risk to which they are exposed in their clinical practice.[2,3] The rate of Covid-19 infection among health professionals has been as high as 21.4%. It is essential that we understand the reasons for and consequences of this high infection rate, as not only are health workers at risk from these transmission mechanisms, their close and continuous contact with people affected by Covid-19 has also made them vectors of transmission.

During this year, changes made in procedures and interventions as knowledge developed have generated confusion among professionals and given them the impression that the correct measures were being introduced late. The shortage of personal protective equipment and support systems for the most serious patients led the authorities to roll out plans for prioritizing and rationalizing the use of supplies, while material that offered better protection was reserved for professionals exposed to aerosol-generating procedures.[4]

The SANICOVI®[5] study concludes by recommending measures that include the appropriate management of preventive, protective, educational, and organizational resources, both human and material. This not only prevents infections among healthcare professionals, but also ensures safer patient care. Workloads must be adjusted according to the care setting, and prevention procedures must be reinforced, training improved, and protocols disseminated and implemented to provide tailored protective measures.

Covid-19 diagnosis has increased with the incorporation of rapid tests that detect viral antigens or agglutinating antibodies, thus improving detection in the acute or convalescent phases. The sensitivity and specificity of each test depend on the stage of infection, so each one has a maximum effective period beyond which its results may be erroneous.[6] Each test, therefore, must be selected according to time and circumstance.[7]

The course of Covid-19, characterized by an initial viral phase followed by a hyperinflammatory phase and a prothrombotic phase, is better characterized. All 3 phases impact on the various manifestations of the disease.[7] Several prognostic factors have also been identified that have significantly influenced the management of patients during the months of the pandemic,[8] while the early, unproven use of lopinavir/ritonavir, hydroxychloroquine, and azithromycin has been stopped after they were shown to be ineffective in trials.

The current therapeutic gold standard is oxygen therapy; high-flow oxygen therapy has emerged as an essential modality, and the need to develop intermediate respiratory care units is clear. In these units, the need for orotracheal intubation (OTI), a procedure associated with complications and mortality (OTI 54% vs. non-OTI 7%), is significantly lower thanks to non-invasive mechanical ventilation and high-dependence care (e.g. proning).[9] In terms of medical treatment, we continue to use remdesivir as an antiviral, dexamethasone or other steroids as anti-inflammatories,[10] and anticoagulation to prevent or treat thromboembolic disease, despite their obvious limitations. Tocilizumab, an IL-6 receptor blocker, continues to be used, despite conflicting results in clinical trials.

Promising new data are being obtained with convalescent plasma, hyperimmune gammaglobulin, and monoclonal antibodies that neutralize viral epitopes, such as bamlanivimab or casirivimab plus imdevinab or etesevimab.[11] The FDA has authorized bamlanivinab alone or in combination with etesevinab for mild-to-moderate non-hospitalized patients. Pending further evidence, the antiparasitic ivermectin, the JAK inhibitor baricitinib, and IL-1 inhibitors are not yet recommended due to lack of data.[12] Two trials have shown that colchicine shortened recovery time and decreased hospitalizations and complications. In preclinical studies, plitidepsin, approved for multiple myeloma, has recently shown 27.5 times higher anti-SARS-CoV-2 activity than remdesivir.

Fortunately, in contrast to the scant progress made in therapy, several vaccines have been authorized in just 10 months, including novel mRNA vaccines (Pfizer, Moderna), vector-based vaccines, similar to those used for Ebola (Astra-Zeneca), and other vaccines in the pipeline, such as mRNA (CureVac) and vector-based products (Janssen and the Russian Gamaleya) and adjuvanted subunit vaccines (Novavax, Sanofi-GSK).[13] All of them target the spike (S) protein.

The very high viral replication has led to the appearance of mutant variants, including spike mutations, which demand close surveillance. Asian countries prioritized traditional techniques

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(inactivated virus) that are less potent but offer more viral targets. Current vaccines are safe and very effective, although the duration of immunity is not known. Nor is it known whether they will avert disease or infection by preventing transmission from vaccinated individuals. Some interesting projects are investigating apparently powerful mucosal vaccines that offer sterilizing immunity. All the evidence suggests that we will need to receive more than one vaccine.

Covid-19 causes persistent symptoms in most patients (fatigue, muscle weakness, difficulty sleeping, anxiety, or depression).[14] The long-term complications remain unknown. In the acute phase, this infection has put a stop to humanized healthcare and forced hospitals to restrict, or even ban, patient visiting. Despite efforts to improve the response capacity of care homes, health centers, and hospitals, the pandemic is generating delays in care[15] and limiting active user participation. Wherever possible, the switch to telemedicine has accelerated, but are we prepared?

After one year, we can say that activities associated with Covid-19 biosecurity and treatment, if they are to be effective, must be backed up by high-quality science and evidence. "Evidence-based policy"[16] must count from the outset on the collaboration of all actors involved in current and future challenges. In addition to the impact on the general population, the effects on health professionals are beginning to be make themselves felt, given the generalized accumulation of working hours, infections, and, not least, moral distress.

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